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A discussion of the role of affective factors in reading within the framework of the substrata factor theory is presented. The substrata factor theory and theories of the intellect are briefly discussed, and the absence of affective factors in these theories is pointed out. These affective factors are seen as influential in the individual's working system for solving problems, including the problem of learning to read. Learning to read is viewed as a developmental task imposed by society at the time the child enters school, and his previous history in coping with earlier problems and challenges is concluded to influence his approach to this latest task. Research studies discussing such affective factors as self-concept, autonomy, anxiety, an accurate perception of reality, environmental mastery, and attitudes toward learning are reviewed, with emphasis on their influence on learning to read. The need for greater clarification of educational objectives in the affective domain and better methods for evaluating the accomplishment of these objectives are noted. A bibliography is included. (RT)

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AFFECTIVE FACTORS IN READING

Symposium: Theoretical Models and Processes of Reading
Friday, May 2, 1969 -- 10:45-11:45 a.m.

It would seem appropriate, in a memorial symposium to Jack Holmes, to discuss the role of affective factors in reading within the framework of the substrata factor theory, since this was his major contribution to the psychology of reading, and perhaps more broadly, to the psychology of cognitive processes. Such an approach poses an immediate problem, however, for reasons which will become apparent.

Holmes was seeking to develop a model of the intellect which would be applicable to any cognitive activity, but he chose to concentrate on reading partly because of its focal point in the educational process, but also because, being a highly complex ability involving a wide variety of different kinds of factors, it provided a perfect illustration of the intricacies of his hierarchical model of the intellect.

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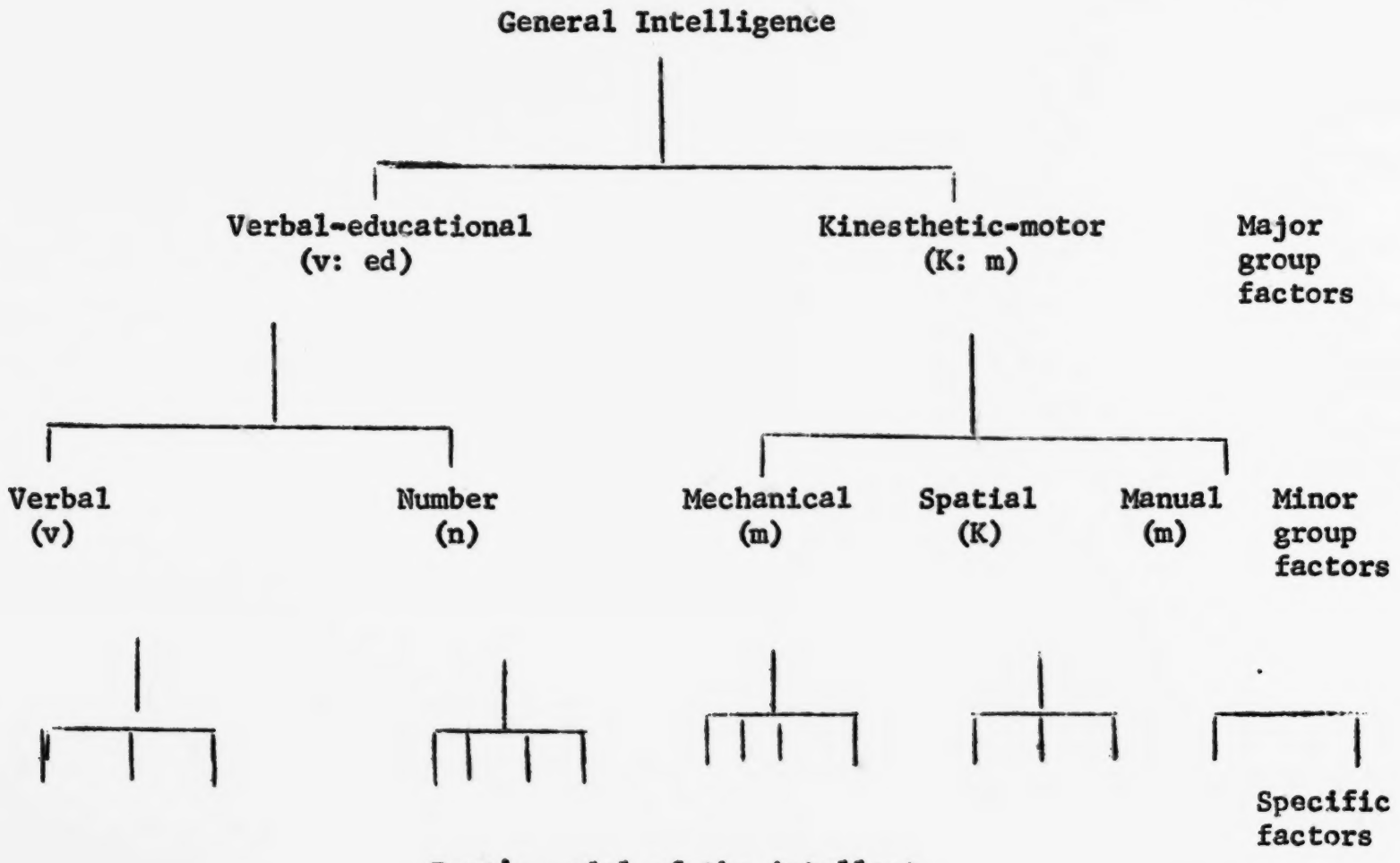
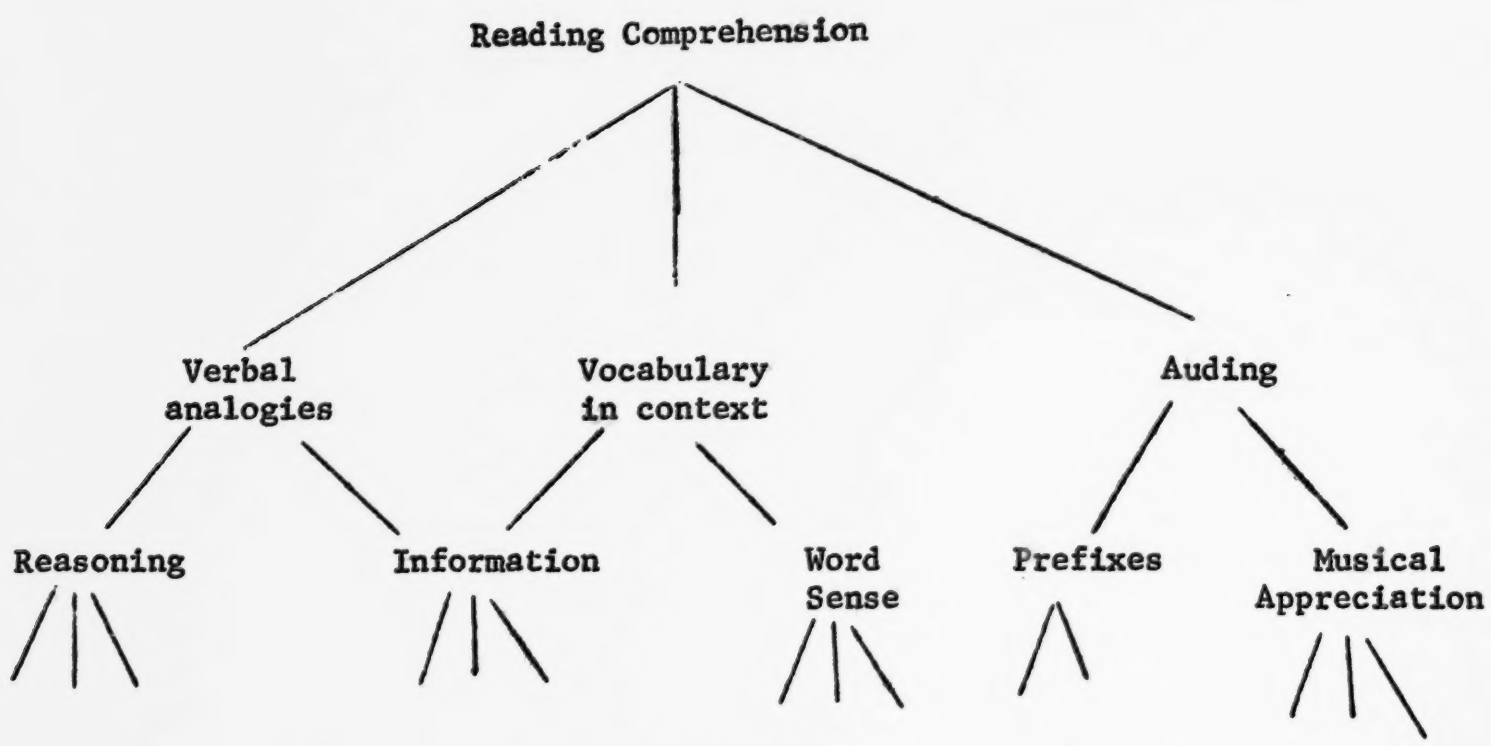
Models of the intellect are by no means a new phenomenon on the educational scene. We are all familiar with the various constructs which have been advanced at different times to explain the operation of the mind, ranging from Plato's dichotomy of the rational and irrational soul to Guilford's "three faces of intellect" (25), or the information-processing models based on computer simulation techniques. The controversy among two-factor, multiple-factor and sampl[illegible] theories has been well documented elsewhere (Tuddenham , 70). Guilford's theory is an important advance on these in that it expands the concept of intelligence to include such operations as divergent thinking (the core of creativity) and evaluation (also important in creativity) in such areas as social problem solving. Yet the 120 abilities appearing in Guilford's cubic model all seem to have equal status; and there is no obvious reason why one should not continue to proliferate at will the number of abilities one is willing to regard as constituting intelligence. Whether one espouses a one-factor or a multi-factor theory seems to be a matter of the way in which one wishes to consider intelligence. One may, in fact, attempt to effect a compromise among the various theories by arranging abilities in a hierarchy as Burt (11) has done, placing Spearman's general intelligence at the apex g , and subsuming under it two major group factors, verbal-educational (v:ed) and kinesthetic-motor (K:m), each of which in turn comprises a number of minor group factors such as verbal, number, mechanical, spatial, corresponding to Thurstone's primary mental abilities. Finally, under each minor group factor is a cluster of specific abilities which together comprise it. Many of Guilford's specific abilities might be found at this level. Presumably



Burt's model of the intellect



Holmes' model of a working system for reading

Figure 1: Comparison of Burt's and Holmes' theoretical models

one could, if so inclined, continue to fractionate each of these into even more restricted abilities to the point where one arrives at the multitudinous specific connections posited by the sampling theory of Thorndike and Thomsom.

There is a very obvious resemblance between Burt's theory and the substrata model, but Holmes used the hierarchical concept as a means of viewing any intellectual activity in terms of the subabilities which enable it to function, in other words as a way to examine the structure of the mind as it engages in different cognitive tasks. The term "structure" implying as it does, a static quality, must be used in a purely metaphorical sense in this content; and must include the notion that the structure changes from one activity to another, or perhaps even during the course of the same activity, in order to restore in some measure the dynamic flavor which is an essential feature of Holmes' theory. It is this dynamic quality which makes the basic difference between this theory and other hierarchical models, and brings the former closer to the more recent view of intelligence as an information-processing activity.

An element common to all the above theories is that they appear to deal exclusively with cognitive abilities, and one may ask whether the substrata theory differs from its predecessors in assigning a role to non-intellectual factors. It will be remembered that the technique of substrata analysis devised by Holmes to correspond to his psychological model, operates in the following way: A single variable (in this case reading comprehension, but any continuously distributed variable may be used) is selected as the criterion. The investigator

then feeds into the analysis any or all variables which, on the basis of theoretical inference or empirical research, he has reason to expect will contribute to the variance in the criterion variable. He specifies a stringent test of acceptance, that is to say, a variable must make a statistically significant contribution (usually at the .01 level) in order to be accepted. Usually four or five variables are selected in this way, and are designated as Level I of the analysis, being the variables most closely related to the criterion. The next step is to analyze these variables in the same way, i.e. each one becomes a subcriterion, thus producing Level II of the analysis. Obviously, this process may be continued for as many levels as the investigator desires, or until a point of diminishing returns is reached which, in practice, usually occurs about the third level.

Now in all the studies by Holmes and his colleagues using the substrata model and technique, personality and attitudinal factors failed to appear among those variables making a statistically significant contribution to the variance in reading ability. This finding has been replicated in elementary (Singer, 69), junior high (Kling, 40), high school (Holmes & Singer, 31), and college (Holmes, 29). Should we then conclude that affective factors make no contribution to reading ability? A survey of the literature on this question immediately belies such a conclusion. Moreover, as the authors of the substrata studies point out, when the sum of the contribution made by each of the selected variables is computed, approximately 25 percent of the variance in reading comprehension remains unexplained. They surmise that motivational factors, either stable or temporary, may be operating, but these

factors are other than those measured by the personality tests employed. As a matter of fact, the relationship between measured personality variables and reading is usually so tenuous as to prevent their appearance at any level of the analysis.

How can we explain the low correlations usually found between reading and scores on personality tests? They could be due to several factors, among which the following may be mentioned:

(1) Nonintellectual factors are usually measured by personality tests which have been standardized on gross differences in clinical samples. These tests may therefore be insufficiently sensitive as instruments for probing differences among readers of varying levels of accomplishment.

(2) The aspects of personality with which these tests are usually concerned may simply not be the ones which have most bearing on school learning.

(3) The relationship between reading and personality may be different at different age levels and for different groups (Holmes, 30).

These aforementioned difficulties arise from the content and methodology of personality testing, and might be met by devising new instruments and techniques relating specifically to the affective aspects of school learning. We do not as yet have personality measures corresponding to the standardized achievement tests because the school has been much less concerned with the affective objectives of education or the means to assess them. An initial attempt to identify some of the specific personality characteristics related to reading was made in a

study by Athey and Holmes (3).

There is also a theoretical possibility to account for the way in which affective factors function within the framework of the cognitive model. Holmes and Singer, to paraphrase their definition, view reading as a symbolic reasoning process, in which the various cognitive skills are mobilized into a working system (one particular working system from the many available to the individual). By a working system is meant the interaction of whatever aptitudes and skills are mobilized into the hierarchical pattern best suited to accomplish the chosen task -- in this case, comprehending what is read. Computing an arithmetical problem, or detecting a logical fallacy, or even skimming the same passage to extract the main idea, would call for a different constellation of abilities.

Now it is obvious that some of the abilities which are drawn upon when one engages in a given task must be present whoever it is who is doing the task. Reading with comprehension cannot take place unless one has the minimal vocabularly, some knowledge of the grammatical structure of the language, and a certain background of information pertinent to the reading material. These are basic requisites for the task. Over and above these basic requisites however, an individual may increase his comprehension by calling upon skills he has which another person does not have, or may have to a lesser degree. For example, he might fall back on his knowledge of Latin roots to assist him in analyzing the meaning of a key word in the sentence, or he might call on his knowledge of grammar to understand an ambiguous sentence in which one or more words could be functioning either as nouns or verbs. Hence, even in the cognitive realm, everyone's working system for a given task must be somewhat

different, depending on the experiences he has undergone in developing the many strengths he is able to muster at a given time. Holmes' research suggests that some of these strengths may lie in areas which seem somewhat remote from the criterion task. If we had good measures of the appropriate affective variables, many of these "hidden" strengths might be found to lie in the kind of nonintellectual factors which appear in the research literature, that is to say, they would appear at various levels and points of the statistical model illustrating the working system. In addition, it is almost certainly the case that it is affective factors such as the desire for infcrmation and enjoyment which propel the working system into action, sustain it throughout the duration of the task, and terminate the activity as the initial purpose is fulfilled or modified.

We have spoken earlier of the "interaction" of the variables drawn into a working pattern, and it is interesting to speculate on the form this interaction may take. In the definition of reading previously alluded to, the word used is "interfacilitation." This notion has also been expressed in terms of a mutual and reciprocal causation hypothesis, that is to say, the two-way interaction of each of these variables with every other produces changes in all of them and in the overall performance of the criterion task.

Thus, if we consider an affective variable, say self-confidence, its role in the working system might be to enhance certain cognitive skills which in turn affect others, leading to improved performance in reading, which in turn leads to increased self confidence. A more complex example might be anxiety. There is some research evidence (Smith and Carrigan, 63; Nelville, Pfost, & Dobbs, 48) to suggest that a relatively

simple skill such as verbal fluency is facilitated by a high level of anxiety, but the broader, more complex skill of reading comprehension is depressed, because in this case the verbal fluency may take the form of irrelevant responses which interfere with understanding.

The mutual and reciprocal interaction (the world "causation" seems inappropriate in this context) has a further corollary which has been well expressed by Maruyama (45). Maruyama introduces the notion of "initial kick," which, in view of the process of self-amplification of a working system previously described, may assume tremendous importance in the eventual outcome.

> The process of self-amplification has a profound significance for the philosophy of causality. This process makes it possible that dissimilar developments may take place from similar backgrounds due to small, possibly imperceptible differences in the initial kick. 'The same cause produces the same effect' was an axiom in the traditional philosophy of causality. If there was a difference in the effect, a difference of a corresponding size was sought in the cause... Now...we know that the difference may be due to nothing but the difference in the initial kick, which may be imperceptible or at least disproportionately small compared with the difference in the subsequent development. This amounts to saying that 'very similiar initial conditions may produce entirely different developments.'

If one looks at learning in the context of the individual's life history, it may be seen that the initial kick which starts the learning process in a given direction, resulting in the development of highly complex knowledge and skills, may be some personality characteristic, some attitudinal trait, some value system, or even more specifically, the emotional aspect of some event, or even some unrelated affect which, by virtue of occurring simultaneously with a particular segment of learning, becomes associated with it. This association (by contiguity) of events may thus start the whole network of interaction processes

leading to the establishment of interests and achievements. Many events in the form of external or internal reinforcers will subsequently be fed into the working system, which is thus constantly changing in both cognitive and affective composition, and the learning outcome which in turn is both cognitive and affective.

From this discussion there emerges a view of the substrata theory as a dynamic, information-processing system in which the input consists of both complex skills and attitudes toward the particular learning task in question, or perhaps more broadly, toward learning in general. The hierarchical model used by Holmes et al., rather than a graphic representation of the structure of the mind, becomes a convenient device for portraying the hypothesized interaction of the many variables constituting the input which results in the output we call reading comprehension.

When we look at some of the charts portraying the various working systems of boys vs. girls, high IQ vs. low IQ, etc. with the separate percentages attributed to the many skills involved, the model appears rather static, somewhat cut-and-dried, unless we remember that it represents a flash photograph so to speak of the working system of a particular group at a particular point of time. To study a defined group, e.g. bright high school boys, is a first approximation to studying an individual reader's working system as it is at the time of testing, which is somewhat different from the way it may be one year later, or perhaps even 15 minutes later. Ideally we would want to test all the inputs--skills, aptitudes, feelings, attitudes-- as they are called into play while the reading act is actually in progress, much as the eye-movement camera records the reader's eye-movements

without affecting the ongoing process. In this way we would be able to observe moment-to-moment changes in the working system as the reader drew upon his phonetic skill at one moment, recalled a piece of information the next, or became anxious as he made certain inferences from the content read. Such a procedure would call for greater technical sophistication than we currently possess, but the idea is feasible in principle. An approach to this procedure is to be found in an old study by Vernon (73), in which irregularities in the eye-movement records of adults were compared with introspective recall data, showing the effects of interests, emotions, and imagery on comprehension. Certainly introspection is an inadequate method for studying cognitive processes, but with improved technology we may hope for significant advances in understanding the dynamics of thinking which, in essence, the substrata theory attempts to explain.

The conception of attitudes and emotions as potential "initial kicks" which may initiate a spiralling network of learning systems, immediately suggests that such affective influences may have their most profound, if imperceptible, effects in the years of early childhood and elementary school. Early childhood education is, of course, an area which has recently become a focus of attention among psychologists, primarily because they have come to view it as a period of great potential for learning. No one who has had day-to-day experience with young children can doubt that the first four or five years are a period of tremendous learning, but we should hasten to add that, in this context, learning has a broader connotation than is normally given to it in the school

. . .

years. It does not mean learning to read at two years of age, or acquiring the basic "readiness" skills for learning number series, or learning how to think scientifically, though it may include any or all of these. Especially at this age, we make a false dichotomy if on the one hand we insist on accelerating school learning on the grounds that these years are being "wasted" in play, or equally if on the other hand we are opposed to such learning as being "forced." For the young child there is no division between his cognitive, emotional, and social learning; these are merely convenient ways for us to look at what is happening, and like all frameworks, they can be misleading if we place too much reliance on them. What the child is learning is ways of coping with his environment and manipulating it to fulfill his needs. Any so-called cognitive learning which takes place provides, or should provide, additional fuel for continued problem solving. The problems are of two kinds: those stemming from the child's internal needs, and those stemming from the external demands imposed on him by the physical and social environment. Young children, when they first come to school have, by virtue of their home experiences, already begun to manifest individual styles of coping with both these kinds of problems. Researchers in this area, notably Kagan (38), Witkin (76), and Gardner (20), have referred to these ways of coping as "cognitive styles," by which is meant a style of cognitive functioning related to one's personality makeup. In bringing together threads from perception, concept development, and personality, the concept of cognitive style may have important implications for reading, though it should be emphasized that these are still highly tentative. Kagan views cognitive styles as "stable individual preferences

in mode of perceptual organization and conceptual categorization of the external environment," which are related to the sense of identity, the self concept, and the level of emotional maturity. He has presented evidence that these cognitive styles are acquired early in life.

Perhaps the most comprehensive work in this topic has been done by Gardner and his associates, who have explored six dimensions of cognitive style, which they call "cognitive controls" or "control principles." A detailed description of these principles would be appropriate here only to the extent that it could lend insight into the reading process, but the research on this topic is still very scarce, and only suggestive at best. However the parameters of cognitive style might prove to be among the more important variables of the working system for reading. Gardner has suggested that the cognitive style may represent "a superordinate level of control within the personality system," while the cognitive controls may be subordinate measures possibly more responsive to specific situational requirements. In other words, the cognitive style would determine the general orientation with which the individual tended to approach an intellectual task, but the cognitive controls would represent other characteristics which might be called into play for specific purposes, much as phonetics or Latin roots is called upon in response to the specific task.

The function of the preschool and elementary school then, is to extend the child's repertoire of ways to solve problems, perhaps to make him more flexible in his use of different cognitive styles as the situation demands. In this way, he will learn not only specific content, but new ways of promoting his own learning, and new ways of solving his own problems.

The ability to cope with one's problems is the sine qua non of mental health. Some years ago, a group of clinical and psychiatric experts met to formulate a set of criteria which could be considered the primary indicators of mental health. Among these indicators identified by the panel was that of environmental mastery, of which problem solving is a major aspect. In later life, an individual's mental health might certainly depend on his ability to avoid situations with which he is unable to cope satisfactorily, but the child has no such recourse open to him. If the school situation is unresponsive or even inimical to his needs and potentialities, the child can respond only in the limited ways he has learned up to that time--which may be open rebellion, withdrawal, "leaving the field" psychologically, or as Bruner would say, "defending against" his problems rather than coping with them.

Our mental health experts spoke of problem solving as a crucial aspect of mental health, but surely this does not go far enough. The healthy person, whether he be child or adult, may well have worked out a modus vivendi, an armory of weapons and tools for coping with present and future problems, which are going to beset him whether he likes it or not. But the healthy person also searches for problems. He generates questions, and actively seeks solutions to them. He learns because he wants to know, and because one problem opens up others in a continuously expanding panorama. The mentally healthy child is the one who wants to learn, and this includes most children of preschool and kindergarten age, except for those whose egos have been seriously assaulted by ill-treatment or deprivation.

To bring these threads of discourse together: The child comes to

school having learned certain ways of dealing with problems occasioned by his inner needs and cultural demands. The school must accept these coping styles, however inappropriate or limited they may seem, as being the only ones the child could have learned, given his particular circumstances. It must keep the classroom situation flexible enough to accommodate many different coping styles, and must teach the child alternative ways of coping which are more efficient or more socially acceptable. On the other hand, the child who has had many experiences of the satisfaction to be obtained from successfully coping with problems will be ready to meet new problems with zest and confidence. He will, in fact, seek out his own problems, his own worlds to conquer. Even animals who have received adequate stimulation and affection in infancy will seek out new experiences which will expand their mastery of the environment (White, 75).

When we look at growth and development in terms of learning new ways to cope with problems and to achieve environmental mastery, learning to read may be seen in a new perspective. Learning to read is a problem or demand imposed by a culture at a certain age, a developmental task, as it were. Knowing how to read not only satisfies this demand (i.e. satisfies the adults concerned), it also gives the child a new tool to solve his problems, and at the same time opens up new worlds to explore, in the form of new questions to which answers, if they exist at all, are readily available in the form of books. (What other medium gives the answers in such convenient, easily digestible form?). Knowing how to read thus contributes in no small measure to the child's feelings of environmental mastery. According to Erikson (17), the outstanding characteristic of the

elementary school child is his "industry", his need to learn the technology of his culture, his enthusiasm for "projects", in brief, his willingness to engage in experiences from which he learns to expect the pleasure accruing from work, an expectation we hope he will retain throughout his life.

Thinking about the relationship between this aspect of mental health and learning, and the way in which reading fits into this perspective leads one to a consideration of the various aspects of mental health enumerated by the panel of experts on the Joint Commission, and to wonder to what extent the research literature has confirmed the relationships between reading and the dimensions considered by the panel as indicative of mental health. Following the line of reasoning which views reading as one in a series of culturally imposed developmental tasks, one might hypothesize that the good reader will be the child whose home background has equipped him to cope with successive developmental tasks, and has thus placed him in the best position to meet the challenge of new tasks imposed by the school. We may leave aside for the time being two related objections--that reading may provide an escape for many poorly adjusted students from social and emotional problems, and that some well adjusted children who are poor readers can find a sense of well-being through other avenues such as sports. If the first is true, it probably applies to older children; and if the second is true, it cannot continue to be true for very long, by virtue of the tremendous pressures brought to bear by both home and school in connection with learning to read. Perhaps we need to consider the relationship between mental health and adjustment, and to ask ourselves whether a person cannot achieve mental

health without being extremely well adjusted in the social and emotional sense.

The Joint Commission's criteria have been used therefore as a guide to organizing the research literature on affective factors in reading. If the relationship with reading turns out to be positive in most of these categories, we may assert with rather more confidence that, within the age-range considered, (which in this case is preschool through high school), those children who are superior readers tend to be the ones who exhibit characteristics stipulated by experts as criteria of positive mental health. Accordingly, the research will be discussed under the following headings as they appear in the report (Jahoda, 34). The order has been changed somewhat, and two new categories added, Attitudes toward learning and Anxiety: *

Self Concept.

In general, the research literature suggests that good readers tend to have more positive self concepts than poor readers (Hallock, 26; Lockhart, 36; Lumpkin, 37; Malmquist, 43; Seay, 57; Zimmerman and Allebrand 78). This finding seems to hold for a variety of measures of self concept, and for all grade levels from one through nine. More specifically, feelings of adequacy and personal worth, self-confidence and self-reliance seem to emerge as important factors in the relationship with reading achievement. Conversely, underachieving readers tend to be characterized by immaturity, impulsivity, and negative feelings concerning themselves and their world (Blackham, 7; Bodwin, 8; Schwyhart, 56; Toller, 69). The work of Bricklin (10) and Sopis (64) suggests that the relationship may be defined in terms of particular reading deficiencies and the self

* For a fuller review of the literature see Athey & Holmes (3).

image as a reader. Wattenberg & Clifford (74) suggest that indices of the sense of personal worth and competence, if used in Kindergarten, would add significantly to reading prediction.

Autonomy

Shatter (59) found that fourth grade boys who were retarded readers made significant gains in reading and in maturity, independence, and self-reliance as a result of a group therapy program. McGinnis (47) found that parents of good readers manifested attitudes favoring growth of independence, and exposed their children to democratic practices and environmental activities which would encourage such growth. Conversely, Carrillo (12) found poor readers to show lack of independence, avoidance of leadership opportunities, and a poor attitude to responsibility. On a nonverbal task requiring the subject to place himself in relation to a triangle with points labelled parents, teacher, and other children, poor readers placed themselves within the triangle significantly more frequently (Henderson, Long, and Ziller 28).

Accurate Perception of Reality

There is some suggestion that poor readers may be less aware of (Margulies, 44), and more prone to hold erroneous conceptions of, their environment (Jackson, 33), specifically their teachers and peers (Holzinger, 32). They have been found deficient in ego strength, defined as "the ability to gauge reality and synthesize behavior in appropriate goal-directed activity" (Barber, 4). Ramsey (53) and Lasswell (41) have remarked that poor readers are less realistic in their estimates of themselves as readers, while Bouise (9) and

Van Zandt (71) have demonstrated a similar lack of realism with respect to educational and vocational aspirations. In a series of carefully documented case studies, Shrodes (60) has described changes in students' self-awareness and growth of insight into the motivations governing behavior as the result of a course of bibliotherapy.

Holzinger (32) found that poor readers in the first grade scored significantly lower on peer and teacher perception, while those in the fourth grade, in addition to the above measures, were also significantly lower on self perception. There is some suggestion that poor readers may be more interested in the world of fantasy than in the realities of the school situation. Gates (21), for example, observed 26 cases of recessive behavior, including chronic mind-wandering and day-dreaming, among 100 poor readers.

Environmental Mastery

Blackham (7) found ninth grade overachievers in reading to have a greater amount of intellectual energy at their disposal, to be more spontaneous and creative, and able to make finer intellectual discriminations. Tabarlet (68) found fifth grade children, two or more years retarded in reading, to be inferior to normal readers in interpersonal skills, social participation, satisfactory work and recreation, and adequate outlook and goals. Carter (13) reviewed the later careers of retarded readers of normal intelligence, and found that their vocational mobility and aspirations tended to remain horizontally oriented. Norman and Daley (49) found clusters of items suggesting feelings of "environmental deprivation" and maltreatment to differentiate poor male readers in the sixth grade, while Spache concluded from two studies (65, 66) that the typical retarded

reader in the primary grades had less insight into the human dynamics of a situation, and manifested less solution-seeking behavior. Abrams (1), likewise concluded that non-readers were more impulsive and less able to respond appropriately to environmental stimuli than good readers.

Attitudes Toward Learning

Since reading is the basis of most other school subjects, it seems logical to suppose that when the child finds reading a pleasurable experience, his positive attitudes toward reading will rapidly become generalized to most other subjects. Conversely, his expanding interests should lead to a deeper love of reading as a primary source of information and enjoyment. Such burgeoning curiosity may find many other avenues of expression besides reading, of course, but in this society reading still remains one of the major vehicles for satisfying a desire for knowledge. Some authors have suggested that curiosity may be a basic drive (White, 75), and the members of the White House Conference panel assign it high priority in their list of important indicators of mental health.

The available evidence tends to support the view that good readers are likely to be more intellectually oriented (Gates, 21; Granzow, 23; Witty, 77), to exhibit higher aspirations (Ketcham, 39) and drive for achievement (Bauer, 5), more curiosity (Maw and Maw, 46), and more positive attitudes toward school in general (Carter, 13; Granzow, 23) and reading in particular (Healy, 27; Groff, 24; Ketcham, 39). Johnson (35) found that by categorizing first-grade children as "eager" or "reluctant" readers, he could predict reading success in the second grade, even though the two groups made comparable scores in initial reading readiness tests. Attitudinal factors have similar implications

for remedial reading (Sister Mary Peter, 51).

Biel (6) and others have hypothesized that the known sex difference in the number of reading disability cases may be attributable in part to the difficulty boys experience in identifying with women teachers in the primary grades. Gowan (22) and Fliegler (18), after reviewing the literature on gifted underachievers, point out that the underachiever is usually characterized by an inability to identify with authority figures, or to create warm relationships with either teachers or peers. Dorney (15) found that delinquent adolescent boys improved significantly in their attitude toward authority figures after a course of reading instruction.

Anxiety

Smith and Carrigan (63) have suggested that anxiety is an important dimension in reading disability, its role being to excite some functions such as fluency, and to depress others such as word recognition and day-to-day memory. A number of investigators have found a significant negative relationship between reading comprehension and anxiety (Pacheco, 50; Frost, 19; Cowen et al., 14; Phelps, 52; and Neville, Pfost and Dobbs, 48) or neuroticism (Savage, 54). Other authors have suggested that the influence of anxiety may lie in its interaction with other variables such as perceptual rigidity (Simula, 61), introversion (Veehar, 72), intelligence (Scarborough, Hindsman and Hanna, 55), socioeconomic status (Dukes, 16), and disparity of reading and arithmetic performance (Lynn, 42). On the other hand, some researchers have failed to find any relationship between reading ability and anxiety (Anderson, 2; Shapiro, 58), so the role of anxiety in reading success or failure remains in some doubt.

In summary, the organization of some of the research literature into domains corresponding to the characteristics which the Joint Commission on Mental Health identified as major dimensions of the healthy personality does suggest the possibility of a relationship between all of these dimensions and reading success or failure. It lends credence to the notion that, if learning to read is viewed as a developmental task imposed by the society at the time the child enters school, then the child's previous history in coping with earlier problems and challenges will be an important determinant of his style of approach to this latest challenge. In fact, the link between the two theoretical models discussed--the substrata model and the developmental task model--must be sought in the early experiences of autonomy, mastery, etc. which initiate the whole process of cognitive-affective growth, and are bound up with the individual's cognitive style. Thinking again in terms of an individual's dynamic working system for reading, that small "initial kick" which starts the child on the road to self-confidence or environmental mastery may, through its reciprocal interaction with the intellectual and psychomotor variables involved, produce a high level of achievement on a complex variable like reading ability out of all proportion to its original power.

In view of this complex interaction, it is apparent that the school can no longer afford to devote the major part of its resources to teaching only in the cognitive domain, and an insignificant portion, if any, to the affective domain. As pointed out earlier, we need not only greater clarification of our educational objectives in the affective domain, but much better methods for evaluating our accomplishment of these objectives, so that evaluation of the cognitive and affective can proceed hand-in-

hand in a coordinated fashion. On the research front, such measures would be invaluable in sharpening up the picture of the precise relationships between affective factors and school learning. Until such time, we must remember that learning to read, or even school learning as a whole, is not an end in itself, but a means toward greater self-expression through successful coping with problems and the invention of new problems with which to challenge the developing organism.

> The role of the intellect is to enrich rather than curb the emotions, to direct their expression toward goals emerging from viable knowledge and cultural ideals (Stratemeyer, 67, p. 13)

If we want our children to be intellectually literate, perhaps we should concentrate on making them emotionally sound as the most efficient route to our dual objective. Perhaps we should worry less about Johnny's reading ability, and more about Johnny.

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